



Putting Research to Work

WisDOT RD&T E-Newsletter, November 2004

Technical information for state DOT highway professionals

Prepared by CTC & Associates LLC

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Research World

Canadian Libraries Launch Transportation Research Portal

In collaboration with other Canadian transportation libraries, the Transport Canada Library has launched the Canadian Transportation Research Gateway, a new Web site that provides a comprehensive collection of annotated resources on transportation in Canada. Visitors can view links to transportation Web sites alphabetically, browse the site by subject or resource type, and search all the resources. Visit the site at <http://www.tc.gc.ca/ctr-g-prtc>.

ITS Aside, Japan Pushes Transportation Alternatives

In Japan, where the 11th World Congress on ITS was held in October, officials are setting aside cutting-edge computer and communication technologies and battling congestion with a simpler campaign. The Transport Ministry is encouraging commuters to opt for public transportation and park-and-ride alternatives. Read about the efforts in *The Asahi Shimbun* at <http://www.asahi.com/english/business/TKY200410200150.html>. Courtesy of Transportation Communications Newsletter.

Construction Management Scan Focuses on Contract Delivery, Quality

A University of Colorado-Boulder site has posted a summary of a May scan tour of Canada and Europe sponsored by FHWA. Highlights include open-book Early Contractor Involvement project delivery in England, price-excluded best value contractor selections in Ontario, and early use of risk management in contracting. See <http://construction.colorado.edu/cmscan/>.

Interactive Road Safety Site for UK's Young Drivers

A new UK Web site designed for young people uses interactive programming including traffic light reaction and hazard perception tests, a road sign quiz and word searches to improve road safety. Users can test their reactions and e-mail the results to friends as a challenge. An interactive CD-ROM uses powerful messages to raise awareness of issues involving road safety and responsible vehicle use. Visit the site at <http://www.steerclear.org.uk/index.html>.

UK Compares Sleep-Related Crashes on Different Road Types

The United Kingdom Department for Transport has released a report on sleep-related crashes. For the roads studied, 25% of crashes that caused death or serious injury were sleep-related; male drivers caused 85% of sleep-related crashes; and while road crashes occur mostly on Fridays in Great Britain, sleep-related crashes occurred mostly on Mondays. http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_032139.pdf
Courtesy of the TRB E-Newsletter.

To receive notice of **Putting Research to Work** each month, e-mail wisdotresearch@dot.state.wi.us.

Previous issues are available at <http://www.dot.wisconsin.gov/library/publications/format/newsletters/rdt.htm>.

Other e-newsletters for transportation professionals:

TRB E-Newsletter from the Transportation Research Board: <http://gulliver.trb.org/news/>.

The AASHTO Journal from the American Association of State Highway and Transportation Officials:

<http://www.transportation.org/publications/journal.nsf>.

CTS Research E-News from the University of Minnesota: <http://www.cts.umn.edu/publications/enews/>.

Texas Transportation Researcher from TAMU's Texas Transportation Institute: <http://tti.tamu.edu/researcher/>.

Austrroads Newsletter from Austrroads: http://www.austrroads.com.au/austrroads_newsletter.html.

Transportation Communications Newsletter: <http://groups.yahoo.com/group/transport-communications/>.

Designing for the Future

WisDOT Viaduct Project Wins FHWA Design Award

WisDOT District 2 has earned a Merit Award in FHWA's biennial Excellence in Highway Design awards for its Sixth Street Viaduct project in downtown Milwaukee. The state's first design-build project, the viaduct was completed in 2002 and features twin high-performance concrete cable-stayed bridges. Read about all the award winners in the latest issue of *Focus* at <http://www.tfhr.gov/focus/sep04/05.htm>, and learn more about the viaduct on page 15 of HNTB's *Designer* magazine at <http://newsroom.hntb.com/downloads/designer77.pdf>.

Suburban Sprawl Linked to Health Problems

A new RAND Corp. study finds that suburban sprawl is linked to the incidence of many chronic health ailments. In the study, which named Milwaukee among regions with the least suburban sprawl, researchers found that people who live in areas with a high degree of sprawl spend more hours behind the wheel, and are more likely to report chronic health problems such as high blood pressure, arthritis, headaches and breathing difficulties. See <http://www.rand.org/news/press.04/09.27.html>.

New FHWA Initiative Focuses on Project Delivery Innovations

FHWA has created a new Special Experimental Project to identify innovative public-private partnership approaches to project delivery. SEP-15 aims to increase project management flexibility, improve efficiency and timely project implementation, and explore new revenue streams. The project also addresses environmental compliance and right-of-way acquisition. State DOT projects approved for participation in SEP-15 may be granted flexibility in meeting FHWA's traditional project approval requirements. Read more at <http://www.fhwa.dot.gov/programadmin/contracts/101404.htm>.

Detroit Bridge Project Reconnects Historic Neighborhood

A historical commercial district in Detroit is getting a second chance at a context-sensitive approach with the construction of new access ramps leading from the Ambassador Bridge to two Interstates. HNTB is designing eight new vehicular bridges and one pedestrian bridge that rejoins the Mexicantown neighborhood's east and west sides, which were divided when the highways were built in the 1960s. Read more in HNTB's latest *Designer* magazine (article begins on page 4) at <http://newsroom.hntb.com/downloads/designer10-04.pdf>.

Geometric Design Help for Two-Lane Roads

FHWA has posted a new resource list of information about its Interactive Highway Safety Design Model, a suite of software analysis tools to help road designers make decisions about existing or proposed two-lane roads. IHSDM, which is available for free download, provides guidance in crash prediction, design consistency, intersection review, policy review and traffic analysis. See <http://www.tfhr.gov/safety/ihsdm/pubs/04152/index.htm>.

Nevada Rail Project Puts Real-Time Information on the Web

The city of Reno, Nev., is addressing public concerns about a rail project with ReTRAC.info, an online resource that integrates wireless technology, information management software, and the Internet to provide real-time information on the project's environmental compliance. The tool has also streamlined work processes and conserved financial resources. Find out more in FHWA's *Successes in Streamlining* at <http://environment.fhwa.dot.gov/strmlng/newsletters/oct04nl.htm>.

Washington Roundabout Part of Public Perception Study

A new two-lane roundabout in Bellingham, Wash., will be part of a national study by the Insurance Institute of Highway Safety, which is examining driver perception before the roundabout was built and three to four months after. Gaining public acceptance is a critical aspect of roundabout development. Read more on page 15 of Washington DOT's WST2 newsletter at <http://www.wsdot.wa.gov/TA/T2Center/T2Bulletin-archives/2004Fall.pdf>.

Construction and Materials Innovations

UW-Milwaukee to Host Coal Ash in Concrete Workshop

The latest in the use of coal ash in concrete and other construction materials will be the focus of a two-day workshop hosted by UW-Milwaukee this week. The Nov. 4 and 5 gathering at the downtown Holiday Inn features several presentations of interest to highway builders. See <http://www.uwm.edu/Dept/CBU/seminars/Seminar%2064%20RegisInfo/Seminar64.htm>.

WHRP Asphalt Research Will Aid WisDOT in Adopting New M-E Design Guide

A study of the support strength of crushed aggregate base course by OMNNI Associates found limestone aggregates in Wisconsin more resilient than granite aggregates. The study focuses on resilient modulus, a measure of elastic strength key to designing asphalt layer thickness in AASHTO's new Mechanistic-Empirical Design Guide. See the report (WHRP 04-05) at <http://www.whrp.org/publications.htm>; the revised final report and an RD&T Brief will be available soon at <http://www.dot.wisconsin.gov/library/research/reports/asphalt.htm>.

Admixture Firm Wows Northeast with 4x4 Concrete Demonstration

Officials from several DOTs got a firsthand look at a new method for quickly repairing concrete at a demonstration last month in Massachusetts. Using local materials and a combination of admixtures, a Degussa Admixtures crew poured a section of 400 psi flexural strength concrete that supported a ready-mix concrete truck after just four hours of curing. Read the press release at http://www.aggregate-us.com/_aius/news/company/co_04_rmc.cfm, and learn more about the system at <http://www.masterbuilders.com/4x4>.

Glass FRP Bridge Deck Studies Posted

Colorado DOT recently posted studies of fiber-reinforced polymer bridge decks made with glass fibers rather than carbon. Researchers found that high temperatures degrade tensile strength and stiffness of glass fiber-reinforced bridge decks (see <http://www.dot.state.co.us/publications/PDFFiles/ofallan2.pdf>), and that freeze-thaw cycles can have a similar effect (see <http://www.dot.state.co.us/publications/PDFFiles/HPCParker.pdf>). Still, GFRP remains feasible for bridge design—see <http://www.dot.state.co.us/publications/PDFFiles/Ofallanpark.pdf>.

Concrete Groups Offer Free Membership to Site on Latest Repair Practices

FixConcrete.org, a joint effort of the American Concrete Institute and the International Concrete Repair Institute, is holding a free membership drive. The site offers 500 videos on repair scenarios, including bridges and concrete roads—even geotechnical bolstering of settled structures. Read more in the October issue of *Concrete Monthly* at <http://www.concretemonthly.com/monthly/art.php/1069>, and register at www.fixconcrete.org.

Colorado DOT Tests Sinusoidal Tining

In an effort to find a longitudinal tining pattern for sound control that does not lead to traffic wander, CDOT is testing various grooves. Most interesting is sinusoidal—S-shaped, meandering tining, which is being tested in one of seven 1,000-foot sections. Other sections experiment with Astroturf drag, saw grooves and more. Read more in the *CDOT Research Newsletter* at <http://www.dot.state.co.us/Research/2004-3.pdf>.

How to Rapidly Adopt New Materials Like Polymer Paving Carpet

FHWA just posted a report on last year's scan tour on the development and implementation of superior materials in Europe. Discoveries included an innovation contest in the Netherlands that resulted in the use of precast polymer road surfaces laid down like carpet; integration of accelerated load and selective field tests to hasten performance evaluation; and widespread use of innovations including porous pavements and high-friction surfaces. See <http://www.international.fhwa.dot.gov/superiormaterials/superiormaterials.pdf>.

Operating/Optimizing the System

FHWA Encourages Planning, Operations to Link Up

FHWA's Office of Operations wants DOT planning and operations staffs to partner for greater system efficiency. Although there are benefits to collaboration, there also are challenges. This new guide addresses those sticking points and outlines the steps necessary and opportunities available for operations and planning to begin working more closely together. Find the guide at http://ops.fhwa.dot.gov/Docs/lpo_ref_guide/index.htm.

ODOT Aims to Bring Geotechnical Information Back to Work

Ohio DOT officials are gearing up to develop a system that will provide easy, electronic access to the stacks of geotechnical data that many DOTs now archive on paper. A work group was formed in June with the goal of creating the Unified Geotechnical Data Access Network to provide access to all available geotechnical information in participating databases. Read more in *Research and Technology Transporter* at <http://www.tfhr.gov/trnsptr/sep04/index.htm#infra>.

Oregon DOT, State Patrol Formalize Plan for Winter Emergencies

After dealing with a blizzard that stranded 1,200 motorists on a mountain pass for up to 18 hours last year, Oregon DOT is teaming with the Oregon State Patrol and other agencies to coordinate emergency operations this winter. To clarify responsibilities, the agencies propose creating a shared incident command system, with OSP in charge of activating emergency operations and coordinating medical response, and ODOT handling snow removal and stuck motorists. Read the article in the *Mail Tribune* (Jackson County, Ore.) at <http://www.mailtribune.com/archive/2004/1027/local/stories/05local.htm>.

AASHTO Reports How DOTs Keep Traffic Moving, Safe

Ramp metering, travel information centers, roadside assistance teams—these are just a few of the innovations state DOTs are implementing to put the brakes on congestion and keep traffic moving. AASHTO's "Optimizing the System: Saving Lives, Saving Time" provides examples of how DOTs are keeping motorists safe and moving. Read the report at <http://downloads.transportation.org/OptimizingTheSystem.pdf>.

Pennsylvania Introduces Byways

The first Pennsylvania Byways highway markers on the Gov. Robert P. Casey Highway were unveiled in October. The Pennsylvania Byway signs, featuring a picture of a mountain laurel in full bloom, will be erected along each of the 10 designated byways across the state. Read the press release at <http://www.dot.state.pa.us/PENNDOT/News.nsf/0615221d8a4b715a852565f3004c07fb/1193efad5ee707fe85256f35006b5322?OpenDocument>.

Taking the Guesswork Out of Old Man Winter

FHWA's Maintenance Decision Support System, launched in 1999 to link weather information and winter maintenance managers, has "proven itself to be an invaluable tool for winter operations," says Paul Pisano of FHWA in the September issue of *Focus*. The software system gives maintenance managers a specific forecast of road surface conditions and treatment recommendations. Read about the system at <http://www.tfhr.gov/focus/sep04/03.htm>.

Smart Center Helps VDOT Manage Traffic

Virginia DOT has opened a Smart Traffic Center to manage traffic flow in the Shenandoah Valley. The first center of its kind in Virginia, the center brings to one location the Staunton district traffic engineering sections, the Staunton District Operations Center and incident management. Read the press release at <http://virginiadot.org/infoservice/news/newsrelease.asp?ID=STAN-139>.

Safe Travel/Smart Travel

WisDOT Web Site Will Aid Travelers During Major Interchange Project

Travelers planning routes that include the Marquette Interchange in Milwaukee now have an interactive Web site available to help. WisDOT's new mchange.org site is a key component of the department's efforts to inform the public and assist drivers during the four-year reconstruction of the interchange. Interactive features available on the site include route mapping and desktop traffic alerts. Read the press release at <http://www.dot.wisconsin.gov/news/news/2004general/opa-mchange212.htm>.

Measuring the Value of Safety Treatments

The Road Safety Risk Manager is a software package developed by ARRB Transport Research for Austroads, the association of Australian and New Zealand road transport and traffic authorities. The software facilitates a comparison of the crash risk at a site before and after the implementation of a given treatment. The crash risk assessments can be compared across several proposed road safety projects, allowing the projects to be evaluated for the amount of crash risk reduction they provide for every dollar spent. Find out more at <http://www.arrb.com.au/index.php?option=content&task=view&id=76&Itemid=96>.

ITS Services Are a Hit with Park Visitors

Acadia National Park visitors were surveyed to examine their awareness and use of, and experience with, ITS technologies in the park. The technologies made it easier to get around, according to 90% who used real-time transit departure signs, 84% who experienced automated on-board next-stop message announcements, and 74% who experienced real-time parking information. See the ITS Benefits and Costs Database at <http://www.benefitcost.its.dot.gov/ITS/benecost.nsf/ID/90C43BF96762F17B85256D66005A2EE3>.

Michigan DOT Marks 10th Anniversary of Its Freeway Courtesy Patrol

During 10 years of service to the Detroit metropolitan area, the federally funded FCP has helped nearly 76,000 stranded motorists, changing tires, providing gasoline, making minor vehicle repairs and providing an added measure of travel safety. The program is a boon for all motorists, saving an estimated 10.3 million hours of delay on freeways in the coverage area in 2003. Read the news release at http://www.semcog.org/News/NewsReleases/CourtesyPatrol_08_04.pdf.

Tele Atlas, Clear Channel Set to Deliver Traffic Information

Tele Atlas and Clear Channel Traffic have announced they are ready to begin delivering nationwide traffic information for the top 50 markets to navigation systems using RDS/TMC, the radio broadcast standard technology for delivering traffic and travel information to drivers. RDS/TMC will facilitate the integration of traffic data with current in-vehicle navigation systems. See <http://www.na.teleatlas.com/newsevents/releases/clearchan101904.html>.

Kudos for Three Traffic Information Sites

Federal Highway Administrator Mary Peters recently named Maryland's CHART, Houston's TranStar and San Antonio's TransGuide traffic information Web sites as the nation's best. Said Peters, "We want to give drivers the tools they need to avoid traffic jams and reach destinations safely and quickly." Read more in U.S. DOT's Weekly News Digest at <http://www.dot.gov/affairs/dot18704.htm>.

VDOT's HOV Calculator Shows Time Saved by Carpooling

Virginia DOT's innovative Web tool provides incentive to carpool by allowing commuters to calculate the time they would save by using northern Virginia's high-occupancy vehicle lanes. HOV lanes help mitigate traffic congestion and have become a critical part of the northern Virginia transportation system: I-95's two HOV lanes carry more people than the four regular lanes during rush hour. View the calculator at <http://www.hovcalculator.com/>.